10

IMPROVED SET OF FORCEPS

FOR

EXTRACTING TEETH,

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[As Communicated for the Medical Magazine.]

THERE is no part of the human frame which is more commonly the seat of disease than the Teeth, and consequently none which is so much exposed to early decay. The improvements in dentistry have done much to diminish the amount of suffering which the diseases of them occasion, and to prevent the consequent decay and loss of organs which are of incalculable importance in the physical economy of man.

Yet these improvements, like most others, have been too much in the hands of the few, while hosts have from age to age administered to the diseases of the teeth, with little effect but to augment the sufferings of the afflicted. The diseases of the teeth, and mal-practice, therefore still render it requisite to resort to the operation of extraction much more frequently than is desirable, or than would be necessary, provided the diseases of the teeth were more generally understood, and properly treated than they are even at the present day, by the majority of those who are operating as dentists. This operation, therefore, has constituted a very important part of dentistry, and an almost innumerable variety of instruments have been constructed for performing it. Yet from the time the earliest instruments were introduced of which we have any account, until within the last half century, all the attempts to vary and im-

prove them have been made with very little advantage, since more regard has been had to the ease of the operator than that of the patient. And up to the time when Burdmore, Hunter and Jourdain wrote on the teeth, a few pairs of forceps, of rather rude form, and the instrument long known by the name of the German Key, a clumsy, and often useless or unmanageable article, were all the instruments in use.

Since then, the German key has been much improved by Spence, Savigney and Fox; and the latter, in his valuable work on the human teeth, has explained the principle of using the key in a more perfect manner than I have seen it done by any other writer. No improvement has been made in this instrument since, although numerous attempts have been made for this object. Various instruments combining the form and properties of the key and forceps, with a double claw, and calculated to rest on the teeth next the one to be extracted, have been constructed with the view to extract the teeth perpendicularly. But these have had their day of trial, and have been condemned as useless or mischievous, a judgment readily anticipated by every regular and skilful practitioner, since these, like many other instruments have been introduced by ignorant pretenders, who have *reasoned*, as they *supposed*, on the principle, of their operation, without knowing anything of the form and structure of the teeth, or their articulation with the jaw; and without even having been taught to extract a tooth with the instruments which had been previously in use.

Forceps of some form or other have always been used for extracting the single rooted teeth, yet so little improvement has been made, that besides the unnecessary suffering which has been occasioned by the ignorant and unskilful, who practice tooth-drawing, there has been, and is still, too much caused by the scientific and dexterous operator, owing to the ill-adapted form and imperfect manufacture of these and other instruments.

A painful sense of this fact induced me in A. D. 1820, to attempt some improvement in tooth-forceps — all which had until this time been imported into this country from the best manufacturies in France and England; and all of domestic manufacture which were offered for sale, were of such a form at the beak, that a failure was almost inevitable, without repeated attempts in every operation. They were, and are still commonly made of inferior steel, and badly tempered; or of case hardened iron; and the beaks formed like those

represented in the plate, Fig. 8, having a flat and nearly straight surface, on which was raised a few jags or teeth like those of a smith's rasp. Hence the common occurrence of crushing the decayed crown [as at the dotted line Fig. D,] before the tooth could be grasped with sufficient firmness to extract it; or the jagged teeth of the forceps becoming smooth after a few applications, the instrument was rendered almost useless by repeatedly slipping its hold, and mangling the rest of the tooth till it was broken below the edge of the *alveolus* or bony socket. These are facts which are but too familiar to operators and patients.

To prevent these difficulties, I had forceps made of the best cast-steel and carefully tempered, with jaws or beaks of the form of those represented in Fig. 7, concave or grooved on the inner surface, so that when closed upon the tooth, the weak, defective crown might be untouched, and the extremity of the beaks which were cut with fine file-teeth for about a line or two, [as seen in Fig. 7,] were made to embrace the tooth at its neck or at the deeper and sounder portion of the root, in the manner represented in Fig. 4 and 5, between the dotted lines. Different forms and sizes of these forceps were made, some with the jaws straight, [Fig. 5 and 7,] for the upper teeth; others curved [Fig. 4,] for the under teeth, and others with transverse jaws at right angles nearly with the handles, like those of the larger forceps, shown in Fig. 6 and 3, to be used for either the upper or under teeth, and for the extraction of the roots of molar teeth which were too deeply situated to be reached by the key.

The use of these forceps I occasionally extended to the extracting of loose molar teeth, or those which did not require much force to remove them, and particularly the last or wisdom tooth of the upper jaw, which is often so situated that the key cannot be placed upon it.

Success in these trials, and the conviction that the key was a much more harsh and painful instrument in its operation than the forceps, so far as I had tried them, led me to have others made with their beaks formed to fit the double teeth in the same manner that those above described were made to fit the single ones. In this I am free to acknowledge that I was aided by a hint from Mr Fay, an American Dentist in London, who used for a time, and recommended forceps for extracting the molar teeth, but which were soon abandoned as ineffec-

tual from their limited application, or unsafe, inasmuch as they were all right-angled forceps, and calculated to be used by resting a fulcrum on the tooth next the one to be extracted.

Rather more than three years ago, I had succeeded in completing the set of forceps represented in the plate annexed to this article. I have used them ever since for all cases of extracting to the *entire exclusion* of the key instrument. With regard to their usefulness, and superiority, when compared with the key and other common forceps, it will be sufficient to state, that the teeth are removed with them, by the application of much less force by the operator; and with the least possible pain to the patient, since the gum and socket are left nearly undisturbed, instead of being bruised and splintered in a manner which is very common from unskilful hands, and is too frequently unavoidable by the most adroit and well informed operator. Being anatomically fitted to the teeth they are not liable to slip or to crush the crown of the most defective tooth, if carefully applied, accidents which very frequently occur from the use of the key and common forceps. To illustrate these statements, I have given three figures, A, B, C, in the plate, which represent the fangs of teeth as we often find them broken by ill adapted instruments or with the crowns wasted by disease; such are easily extracted with the forceps here described; and the figures are accurate delineations of teeth which I extracted while I was doing the lithography for the plate. B, and C, had been chipped off by the application of the key till no further hold could be taken of them.

These instruments have not only been proved by my own hand, but I have ordered them for several dentists in this city and in other parts of the country. They have used them for nearly three years, and, I believe, with equal success; indeed with some of them I am assured that the key is a useless instrument.

I am aware that many Dentists in this country and in Europe make some use of forceps for extracting the molar teeth; but they still resort to the key in a great proportion of cases. Mr Koecker, whose book on Dental Surgery was published in London in 1826, is the only writer I have known who recommends the use of forceps for *all* the teeth, yet he gives no description of the instruments, nor have any been imported into this country since that time, which I should feel warranted to use for extracting any of the teeth, except such as are nearly ready to fall from their sockets by occasion of looseness.

In a more recent and valuable work, by Thomas Bell of London, we find directions for using forceps to extract the double teeth; yet Mr B. is particular in mentioning their great liability to crush the defective crowns,—a sufficient evidence, (as well as the drawing in his book,) that his forceps are not well fitted to the teeth; for in the proper application of a suitable instrument for extracting a tooth, be it key or forceps, the defective crown should not be taken into consideration, it has nothing to do with the operation, for neither instrument, if properly made, will crush a tooth; although either will hold one so firmly that it may be *broken* off even if it be sound, by an ignorant or clumsy operator.

That forceps which are calculated to extract the fangs of teeth which the key cannot reach, are a subject of some surprise and attention in England at the present time we have only to turn to the Medical Journals of the current year, where we shall find notices of Mr Shepherd's newly invented forceps,* and a drawing of the same, which is but a facsimile of those made for me by Evans of London, from my own drawings and patterns fourteen years ago. And in one of the latest English works on Dental Surgery, by Mr Jobson, which has been very favorably noticed in the London Medical Gaz. we find the following remarks on instruments, which are quoted also in that periodical.

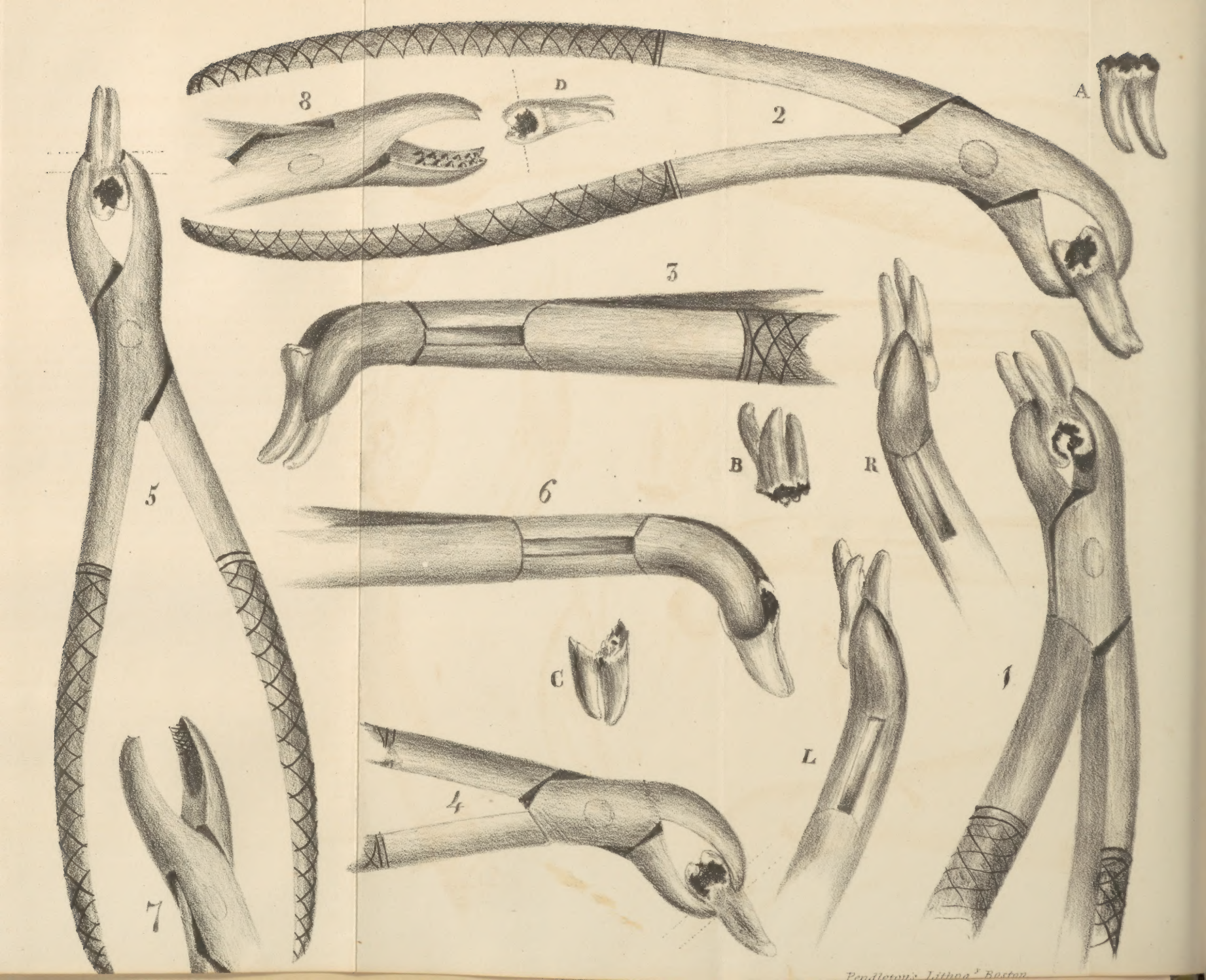
'The forceps is a far more difficult instrument to use than the Toothkey; although this will not at first sight be evident, on looking at their respective construction, or attending to the mode in which they act. But it will soon be discovered in comparative trial of the two, that in applying the forceps great caution is necessary to avoid the danger of breaking the tooth; and considerable experience is required to enable the operator to use the instrument with facility. But when a command of it is once acquired, it is undoubtedly the most applicable of all those that are employed for the extraction of teeth.' Yet when speaking of the key, Mr J. says,—'the toothkey is an old invention, and although it is now the fashion to despise and abuse it (especiallywith those persons, as Mr Bell well remarks, who secretly resort to its use,) it is unquestionably, still the safest, and perhaps also the most useful of all the instruments that are employed for the extraction of the teeth.'

This evident contradiction requires no comment.

* See London Lancet, for May, 24, 1834.

I have now only room to add, that my object in introducing this subject to the profession in the way which I now have, is with the view to have the instruments more generally or extensively tried; confident as I am that they are calculated to prevent much human suffering. The artists who have taken much pains to make them in the most perfect manner (Messrs Weighand and Snowdon, of Philadelphia,) have manufactured a great number of sets, but they are not yet in general use, for when they have been presented for sale beyond the shop of the maker, only those will purchase them who, from a just knowledge of their profession, readily see the principle of their application, while many look at them and marvel how they are to be used.

The annexed Table, referring to the plate, will give all the directions for the use of each pair which can reasonably be desired by those who are disposed to adopt them.



Pendleton's Lithog.ª Boston

REFERENCES TO THE PLATE.

Fig. 1. An oblique view of the forceps for upper molar teeth, having one beak pointed and fitted between the two external fangs, and the other beak formed like those in figure 7, to embrace the inner fang.

Figures R, L. Transverse views of the same forceps, showing the beaks turned laterally to render them more convenient, one pair for the teeth of the right side and the other for the left.

Fig. 2. Forceps for the under molar teeth, with two pointed beaks, so fitted to the fangs of the teeth that if viewed transversely the beaks would appear to embrace the tooth as in figure 3. These forceps are also made right and left by turning the beaks in opposite directions laterally, as with figure 1, R, and L.

Fig. 3. Curved forceps for the molar teeth of either side, with both beaks pointed to fit between the fangs. These are the most convenient for the teeth of the left side, when the operator cannot use the left hand with dexterity, which is required in applying the left hand forceps of figure 2.

Fig. 4. The narrow curved forceps for the single teeth of the under jaw. These have been made right and left, but there appears to be no necessity for this variation. There should be two pairs, one with beaks about an eighth of an inch thick, or not thicker than the narrowest teeth on which they are to be used, the other pair with beaks proportioned to the largest single teeth. Their application extends from the *incisores* to the *cuspidati* inclusive.

Fig. 5. Straight forceps for the single teeth of the upper jaw. The same rules apply to these with regard to the thickness of their beaks, and the class of teeth which they are calculated to extract.

Fig. 6. Large curved forceps for the wisdom teeth of either jaw, with beaks formed at their extremity like those of Fig. 7, but wider. The object of these forceps will be readily seen, when it is recollected that the crowns of the wisdom teeth are often quite spheroidal, and the fangs so converging and united as to form but one conical root.

Fig. 7. This figure is given to show the form and construction of the internal surface of the beaks — smooth and hollow at the thickest part where they are to receive the crown, and less hollow and file-cut near the extremity, where they are intended to grasp the neck of teeth. (as between the dotted lines in Fig's. 4 and 5.) This principle is carried out in all the forceps.

Fig. 8. This is to show the beaks of the forceps in common use with a flat internal surface, toothed or jagged in such a manner as to be liable in all cases to crush the crown of the tooth, (see Fig. D, dotted line) or to slip as soon as the points are rendered dull and smooth by a few applications.

Figures. A, B, C, are drawings of decayed teeth, which had been broken beyond the reach of the key, and were taken out by the forceps with as much facility as if they had been whole.

In using the forceps, it is only requisite to press their sharp extremities between the gum and socket, till they can be made to seize the tooth at the part to which they are fitted, then to grasp the handles only so firmly as to prevent their slipping from the hand in the effort to extract — then after a very little lateral, and rotatory motion in opposite directions till the tooth begins to move, the operation is almost at the same moment to be concluded by lifting the tooth nearly perpendicularly from the socket.

In using the forceps which are for the upper molar teeth of the left side, it will be found most convenient to hold them in the right hand with the extremities of the handles towards the thumbs, or in that position which is called backhanded.

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